

# About Space

## Commercial Space Transportation

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Federal Aviation  
Administration



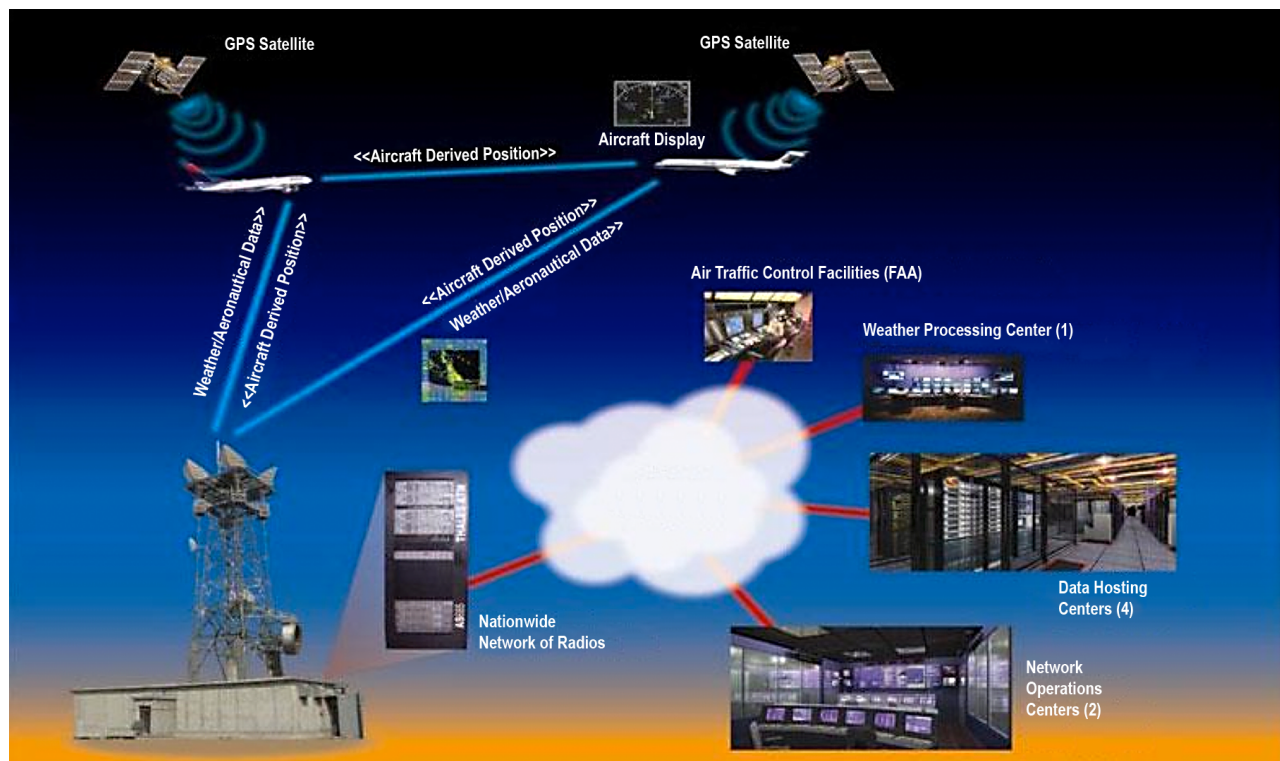
## FAA-Sponsored ADS-B Payload Experiment on First NASA Commercial Reusable Suborbital Research (CRuSR) Program Missions

Within a decade, aircraft and air traffic controllers will use Global Positioning System (GPS) data to determine aircraft position, instead of the system of radars and transponders used now. The FAA's Next Gen air traffic control system will use equipment known as Automatic Dependent Surveillance – Broadcast, or ADS-B, allowing both controllers and pilots to get an accurate picture of air traffic.

But ADS-B has the potential to provide data on more than just aircraft. When a rocket is launched today, the airspace system requires considerable advance notice in order to close the airspace affected by the launch and issue notices to pilots. ADS-B could enable a much

more seamless integration of air traffic and space launch activities.

These possibilities are being actively investigated by the FAA Office of Commercial Space Transportation on an experimental basis. An FAA-sponsored payload (an ADS-B transmitter, loaned to NASA by MITRE Corporation), will fly on NASA-funded CRuSR missions. Vehicles are expected to operate in Vertical Takeoff/Vertical Landing (VTVL) mode with minimal lateral translation during flight. A NASA payload that will monitor vibration and other environmental parameters during flight will also fly the missions.



ADS-B Functional Diagram



These are the first two experimental payloads NASA has selected to fly on commercial RLVs as part of their CRuSR Program.

The FAA's William J. Hughes Technical Center will support these missions by operating their portable ground based ADS-B receiver equipment near the launch sites to receive and record the ADS-B messages transmitted by the payload during flight.

This ADS-B transmitter design has flown several times previously. Transmitters were aboard two large amateur

rockets that flew to 4,000 and 8,000 feet above Mean Sea Level (MSL), on two USAF balloons that flew to over 100,000 feet above MSL, and, after modifications to withstand high acceleration, on a NASA sounding rocket to 76 miles above MSL. The CRuSR missions will be the first flights on commercial launch vehicles.

These missions will be licensed by the FAA's Office of Commercial Space Transportation.

Check for updates on the NASA Flight and Opportunities website (<https://flightopportunities.nasa.gov/>).



**Evan Jackson of NASA's Ames Research Center prepares to install the FAA-sponsored ADS-B payload on NASA's payload rack for the CRuSR Program. The payload rack is then installed in commercial reusable launch vehicles for flight test experiments.**

Photo: NASA/Dominic Hart